REMARKS

Pursuant to the present amendment, claims new claims 77-84 have been added. Claims 19-76 have been canceled as they were subject to a previous restriction requirement. Thus, claims 1-18 and 77-84 are pending in the present application. No new matter has been introduced by way of the present amendment. Reconsideration of the present application is respectfully requested.

In the Office Actions, claims 1-16 and 18 were rejected under 35 U.S.C. § 102 as allegedly being anticipated by Lin (U.S. Patent No. 6,602,729). Applicants respectfully traverse the Examiner's rejection.

As an initial matter, Applicants note that the Examiner indicated that claim 17 would be allowable if rewritten in independent form. However, as shown more fully below, it is believed that independent claim 1, as well as several of the other dependent claims, are allowable over the prior art of record.

As the Examiner well knows, an anticipating reference by definition must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. *In re Bond*, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). To the extent the Examiner relies on principles of inherency in making the anticipation rejections in the Office Action, inherency requires that the asserted proposition necessarily flow from the disclosure. *In re Oelrich*, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981); *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1463-64 (Bd. Pat. App. & Int. 1990); *Ex parte Skinner*, 2 U.S.P.Q.2d 1788, 1789 (Bd. Pat. App. & Int. 1987); *In re King*, 231 U.S.P.Q. 136, 138 (Fed. Cir. 1986). It is not enough that a reference could have, should have, or would have been used as the claimed invention. "The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Oelrich*, at 326, quoting *Hansgirg v. Kemmer*, 40 U.S.P.Q. 665, 667 (C.C.P.A. 1939); *In re Rijckaert*, 28 U.S.P.Q.2d 1955, 1957 (Fed.

Cir. 1993), quoting *Oelrich*, at 326; see also *Skinner*, at 1789. "Inherency ... may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Skinner*, at 1789, citing *Oelrich*. Where anticipation is found through inherency, the Office's burden of establishing prima facie anticipation includes the burden of providing "...some evidence or scientific reasoning to establish the reasonableness of the examiner's belief that the functional limitation is an inherent characteristic of the prior art." *Skinner* at 1789.

Moreover, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142. Moreover, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); M.P.E.P. § 2143.03.

With respect to alleged obviousness, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Health-care Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or

modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. The consistent criterion for determining obviousness is whether the prior art would have suggested to one of ordinary skill in the art that the process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art. Both the suggestion and the expectation of success must be founded in the prior art, not in the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991; *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988); M.P.E.P. § 2142.

Applying these legal standards, it is respectfully submitted that independent claim 1 is allowable over the art of record. By way of background, independent claim 1 is directed to a method that includes providing a device having a dielectric layer, applying a plurality of constant voltage pulses to the device and determining a time-to-breakdown for the dielectric layer based upon a number of pulses applied to the device until the dielectric layer breaks down. It is respectfully submitted that Lin does not disclose nor suggest the method set forth in independent claim 1.

Lin is understood to be directed to a method of testing a dielectric material. Abstract. To that end, Lin proposes use of a testing methodology wherein a reference current (I_{ref}) is initially established. This reference current is chosen to be a value below the breakdown current (I_{bd}) of the dielectric layer but greater than the expected base current so as to avoid wasting time on unnecessary early measurements of the base current. According to Lin, Figure 2 disclosed therein is a flowchart of a prior art method of testing dielectric layers. Lin specifically notes that the stress voltage (V_s) may be incremented at node 4 and the loop disclosed therein may continue. Lin goes on to set forth a flowchart (Figure 5) for the invention described therein. Lin specifically notes that if the measured stress current (I_s) is the same or lower than the reference

current (I_{ref}), then the stress voltage is incremented by an amount and the procedure continues through the testing loop. Col. 3, ll. 38-52. As understood by the undersigned, the methodology disclosed in Lin involves incrementally increasing the voltage applied to the dielectric layer until breakdown occurs. Col. 2, ll. 53-56; Col. 3, ll. 14-17; Col. 3, ll. 49-52. Moreover, the methodologies disclosed in Lin for determining the breakdown of the dielectric layer involve measuring and detecting the breakdown current (I_{bd}). Figure 3; Col. 3, ll. 18-25.

As thus understood, it is respectfully submitted that Lin does not anticipate nor render obvious claim 1 for many reasons. As set forth above, independent claim 1 requires, among other things, applying a plurality of constant voltage pulses to the device and determining a time-to-breakdown for the dielectric layer based upon the number of pulses applied to the device until the dielectric layer breaks down. As described previously, Lin does not disclose applying a plurality of constant voltage pulses, nor is time-to-breakdown determined based upon the number of pulses applied until breakdown occurs. Lin specifically discloses a methodology whereby the applied voltage is incremented or increased at each successive step until breakdown occurs. At no point is the concept of applying constant voltage pulses and determining breakdown based upon the number of those applied pulses even remotely disclosed or suggested.

It is respectfully submitted that any attempt to assert that the invention defined by independent claim 1 is obvious in view of Lin necessarily involves an improper use of hindsight using Applicants' disclosure as a roadmap. A recent Federal Circuit case makes it crystal clear that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 143 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35. Moreover, it is unclear how the methodology disclosed in Lin

could even employ a plurality of constant voltage pulses to achieve the objectives of the invention disclosed therein. Lin relies upon the incrementally increased voltage to achieve a sufficiently high current to cause breakdown of the dielectric. It is believed that the methodology disclosed in Lin is incompatible with that currently set forth in independent claim 1. Thus, it is believed that independent claim, and all claims depending therefrom, are in condition for immediate allowance.

Dependent claims 2 and 3 are likewise to be independently allowable over the art of record. According to these claims, the invention set forth in claim 1 further comprises measuring a current through the dielectric layer after one or more or each (depending upon the claim) of the plurality of constant voltage pulses has been applied. Lin simply does not disclose or suggest a methodology of measuring a current after the application of one or more constant voltage pulses. Accordingly, dependent claims 2 and 3 are likewise believed to be allowable independent of their dependence upon claim 1.

It is further submitted that dependent claim 14 is likewise allowable for reasons other than its dependency upon independent claim 1. In rejecting claim 14, the Examiner cited to Col. 3, ll. 8-17, of Lin. Office Action, p. 5. Applicants respectfully disagree. Claim 14 involves the step of determining at least one parameter of a process operation to be performed to form a dielectric layer on at least one subsequently processed substrate based upon the determined time-to-breakdown. The passages of Lin identified by the Examiner simply do not address or even mention this aspect of the currently claimed invention. The identified passages of Lin merely describe a prior art methodology wherein stress currents (I_s) and base currents (I_b) are measured and wherein the stress voltage may be incremented if breakdown has not yet occurred. There is simply no suggestion in Lin, or any other art of record, for determining at least one parameter of a process operation to be performed to form a dielectric layer on at least one subsequently

processed substrate based upon the determined time-to-breakdown. Accordingly, it is respectfully submitted that dependent claim 14 is independently allowable over the art of record.

New claims 77-84 have been added to further define Applicants' invention. New independent claim 77 is essentially a combination of original independent claim 1 and dependent claims 8 and 14. For reasons set forth above, it is believed that independent claim 77, as well as all claims depending therefrom, are in condition for immediate allowance. New independent claim 81 is essentially a combination of original independent claim 1 and dependent claims 7 and 14. Again, for reasons set forth above, it is respectfully submitted that new claims 81-84 are likewise in condition for immediate allowance.

In view of the foregoing, it is respectfully submitted that all pending claims are in condition for immediate allowance. The Examiner is invited to contact the undersigned attorney at (713) 934-4055 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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